North Country Ag Advisor

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Cornell Cooperative Extension

North Country Regional Ag Team

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"The North Country Regional Ag Team is a Cornell Cooperative Extension partnership between Cornell University and the CCE Associations in Jefferson, Lewis, St. Lawrence, Franklin, Clinton, and Essex counties."

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Website: http://ncrat.cce.cornell.edu/
Facebook: https://www.facebook.com/NorthCountryRegionalAgTeam/
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Our Mission

"The North Country Regional Ag Team aims to improve the productivity and viability of agricultural industries, people and communities in Jefferson, Lewis, St. Lawrence, Franklin, Clinton, and Essex Counties by promoting productive, safe, economically, and environmentally sustainable management practices, and by providing assistance to industry, government, and other agencies in evaluating the impact of public policies affecting the industry."

Managing Weeds Prior to Soybean Harvest

By Michael Hunter

There are certainly a lot of soybean fields across the region that have a considerable number of weeds that were not controlled earlier in the season or have emerged after the last postemergence herbicide application. In recent weeks there have been several soybean growers asking how to best manage weedy soybean fields prior to harvest.

Before anyone makes the decision to use preharvest herbicide application they must understand what these products are intended to do. Preharvest herbicide applications will not speed up seed dry down or increase the rate of maturity. These preharvest applications should be used to cause the soybean leaves to drop quicker and kill these weeds with the intent to dry out the weeds to improve harvest efficiency. In most cases it will be too late to prevent the weeds from producing viable seeds.

Preharvest herbicide options are very limited, and the choice should be based on the weed species present (grasses, broadleaves, or both), the application timing (based on crop maturity, not weed maturity) and the preharvest interval can be followed.

The following are preharvest soybean harvest aid products for consideration:

Glyphosate, when used as a preharvest aid, can be applied to both conventional and Roundup Ready soybeans to control grass and broadleaf weeds. It will not control glyphosate-resistant weeds such as marestail, tall waterhemp, or Palmer amaranth. It will impact leaf drop of Roundup Ready, Xtend, or Enlist soybeans. Applications will be made after 80% leaf drop and there is no green color left on the pods. There will be a 7 day preharvest interval; however, it takes longer than that to effectively desiccate the weeds present.

Gramoxone SL, can be applied as a preharvest aid when at least 65% of the pods have reached a mature brown color or when the seed moisture is 30% or less. The use of a nonionic surfactant or crop oil concentrate is recommended. This is a contact herbicide and should be applied with a minimum of 20 gallons of water per acre to ensure adequate spray coverage. It will control both grass and broadleaf weeds. There will be a 15 day pre-harvest interval.

Sharpen, can be applied as a pre-harvest aid when at least 65% of the pods have reached a mature brown color and greater than 70% leaf drop or when the seed moisture is 30% or less. It will require the use of methylated seed oil at 0.5% v/v (2 quarts per 100 gallons of water). This is a contact herbicide and should be applied with a minimum of 20 gallons of water per acre to ensure adequate spray coverage. Sharpen will only be effective on broadleaf weeds and if annual grasses are present glyphosate should be included in the tank mix. There will be a 3 day preharvest interval; however, according to the label suggests allowing up to 10 days for the optimum desiccation effect. If glyphosate is added to the tank mix the preharvest interval will be 7 days.

Photo credit: M. Hunter.

Aim EC, can be applied as a preharvest aid after crop matures and at least 3 days prior to harvest. Aim EC will control a limited number of broadleaf weeds. It will not be effective for desiccation of marestail. It requires the use of a methylated seed oil or crop oil concentrate at 1 to 2% v/v (1 to 2 gallons per 100 gallons of water). This is a contact herbicide and should be applied with a minimum of 20 gallons of water per acre to ensure adequate spray coverage.

If you would like more information or have any questions, contact Mike Hunter at 315-788-8450 or meh27@cornell.edu.

Managing, Harvesting, and Pricing Forages: Fall 2023

By Kitty O'Neil

Corn silage harvest will begin soon and it looks like it's going to be of extra variable yield and quality again this year, within and across fields. The variability will add an additional challenge for harvest management and also pricing the standing crop. The dry weather in May and June allowed for uninterrupted and on-time planting, but caused early crop stress, uneven emergence, some herbicide failures, and weed control problems. The frequent and occasionally heavy rains since early July have flooded some fields from time to time and exacerbated that 'rollercoaster' look.

Joe Lawrence, Cornell's PRO-DAIRY, emphasizes that silking dates are a key management tool and should be recorded for all fields, every year, to help estimate subsequent harvest timing. Dr. Bill Cox, Cornell, determined that corn requires 750 to 800 $GDD_{86/50}$ from silking, to reach 32% moisture, nearly harvesting stage. Monitoring $GDD_{86/50}$ accumulations from silking date will help prioritize and order fields for chopping. Use the Climate Smart Farming GDD tool for those calculations. For fields with known silking dates, enter that date into the planting date field and set a 750-800 target on the graph. Variable development and maturity this year will present some additional challenge, and importance, for this tool. It's difficult to evaluate maturity of a variable field but give it a good effort. Scout thoroughly to gauge the dominant maturity level in the field. Note areas of significant departure from that dominant condition in case portions may be left, combined with other fields, ensiled separately, etc. Joe also points out that dry weather often results in corn silage with higher fiber digestibility while wet weather does the opposite, and produces poorer fiber digestibility silage. Excessively wet weather around pollination can also reduce fiber digestibility. Both high and low fiber digestibility scenarios impact animal intake potential and subsequent diet formulation and inventory calculations, so monitor closely. Harvesting immature or frosted corn creates another set of considerations. Lastly, Joe recommends a strategy of monitoring whole plant DM and kernel maturity for the best harvest timing decisions. He summarized these ideas and a few more in his July 2023 E-Leader article, which you can access here.

Pricing standing corn for silage requires estimates of yield, quality, and negotiating a fair price per ton or acre. Years like 2023 throw an extra curve into each of these 3 variables. Estimating yield is always tough, but when the stand is variable, more thorough sampling is needed. Count, weigh, and sample corn plants in 1/1000th of an acre. For fields planted on a normal 30" spacing, a 17'5" row length provides this sample. Twenty-inch rows require a 26'2" sample, and 15" row spacing requires a 34'10" sample. A highly variable field will require more of these row-length samples than a consistent field, to get a good estimate. If 3-5 samples are adequate in a typical year, use 6-10 samples in a variable or odd field this year. Average across samples within a field. If the field can be harvested and loads can be counted or weighed to settle on a price, that will be the most accurate.

Estimating value for corn silage when it is immature or variable is tough. The sale price of variable maturity or immature corn silage will depend on yield, dry matter content, and nutrient composition. Dr. Bill Weiss, Ohio State, indicates that immature corn silage is worth about 85% of the economic value of normal corn silage – *if it is the same dry matter content*. Mike Hunter, CCE NCRAT, calculated pricing over several years and concluded that our standing 35% DM corn silage price per ton is, on average, 8.34 times the per bushel corn grain price. This fall, the market corn grain price appears to be around $4.60 per bushel, so standing corn silage should be worth about $38 per ton, 35% DM. Add to that the costs of chopping, trucking, inoculation, ensiling, and 10% shrink, and the cost of stored corn silage might be about $50 per ton, 35% DM. Yields will be lower for drought-stressed, wet-stressed, or late-planted immature fields, therefore harvesting costs, on a per ton basis, are increased.

If the value of "normal' standing corn silage = $38/ton (@ 35% DM)
Then the value of immature corn silage = $38 * 0.85 = $32.30 (@ 35% DM)
If the actual dry matter of the standing immature corn silage is only 27%, then the adjusted price = 27/35 *$32.30 = $25/ ton.

Good dry hay could be scarce this winter. It has been an incredibly challenging season to make good dry hay. First cutting hay would have been no problem, if it was brought in during May and June, but any first cutting left too late, and all subsequent cuttings may have been nearly impossible to harvest as dry hay. We had incredibly few windows of good dry hay weather to permit time for mowing, drying, and baling in July and August. September is typically not a good month for dry hay in the North Country as soil moisture and overnight dew does not usually permit good drying either.

Source your hay purchases now to avoid high prices and short inventories later. Hay growers with extra inventory may find some newspaper, magazine, or web advertising as money well spent this fall and winter, as livestock owners begin to search for hay to get through the winter.

Avoid stressing alfalfa stands this fall by avoiding that Labor Day zone of elevated risk of winter damage. Alfalfa fields in many parts of the region may have escaped much of the drought and excess moisture problems faced by other crops this season, but manage fall 3rd and/or 4th cutting timing to limit harm to stand persistence. Current recommendations are to allow alfalfa stands to rest during a critical window centered around Labor Day prior to the first fall frost. Alfalfa needs at least 900 GDD_{41} to build sufficient root reserves to enter winter in good health, or, if we give it less than 360 GDD_{41} before the first frost, it will not waste root reserves trying to regrow before winter begins. Those days between 360 and 900 GDD_{41} is the rest window we want to avoid cutting alfalfa for best persistence. The rest windows listed in the table below were calculated for 25 locations across NNY using 15-year GDD_{41} averages.

Additional resources:

1. Using the Number of Growing Degree Days from the Tassel/Silking Date to Predict Corn Silage Harvest Date. Cox, W. 2006. What's Cropping Up 16(4):1. http://climatesmartfarming.org/wp-content/uploads/2017/01/GDD-for-silking-to-silage-Cox-Cornell-2006.pdf
2. Pricing Drought-Stressed and Immature Corn for Silage. Weiss B. et al. Ohio State Buckeye Dairy News 13(4). https://dairy.osu.edu/newsletter/buckeye-dairy-news/volume-13-issue-4/pricing-drought-stressed-and-immature-corn-silage
3. Working with Immature Corn Silage. August 2013. Dr. L. E. Chase, Cornell University. https://nydairyadmin.cce.cornell.edu/pdf/newsletter/pdf48_pdf.pdf
4. Pricing Standing Corn Spreadsheet. Beck et al. Penn State Cooperative Extension. https://nydairyadmin.cce.cornell.edu/uploads/doc_379.xls
5. Late Sumer Alfalfa harvest? Take Labor Day off. 2016. J. Lawrence and M. Hunter. Cornell PRO-DAIRY.
6. Alfalfa Fall Harvest Guidelines in N – Should They Change? J. Cherney, D. Cherney and P. Peterson. What's Cropping Up 22(3). 1-5.
7. Cornell Field Crops Resources.
8. Cornell Cooperative Extension's North Country Regional Ag Team Web Resources

County	Town/Village	Avg. First Frost*	Range of First Frost (32°F)*		Low Risk of Frost Damage Cut BEFORE	Frost Damage More Likely AVOID!	Low Risk of Frost Damage Cut AFTER
Clinton	Champlain	5-Oct	19-Sep	21-Oct	18-Aug	↔	12-Sep
	Ellenburg Depot	6-Oct	19-Sep	24-Oct	17-Aug	↔	12-Sep
	Beekmantown	5-Oct	19-Sep	21-Oct	23-Aug	↔	14-Sep
	Peru	11-Oct	19-Sep	3-Nov	26-Aug	↔	18-Sep
Essex	Whallonsburg	6-Oct	19-Sep	24-Oct	24-Aug	↔	15-Sep
	Willsboro	6-Oct	19-Sep	24-Oct	24-Aug	↔	15-Sep
	Ticonderoga	5-Oct	18-Sep	22-Oct	25-Aug	↔	15-Sep
Franklin	Bombay	28-Sep	5-Sep	21-Oct	17-Aug	↔	8-Sep
	Malone	6-Oct	19-Sep	24-Oct	22-Aug	↔	13-Sep
	Chateaugay	6-Oct	19-Sep	24-Oct	21-Aug	↔	13-Sep
Jefferson	Rodman	7-Oct	19-Sep	25-Oct	23-Aug	↔	15-Sep
	Cape Vincent	12-Oct	19-Sep	4-Nov	27-Aug	↔	19-Sep
	Evans Mills	4-Oct	19-Sep	20-Oct	23-Aug	↔	14-Sep
	Redwood	30-Sep	11-Sep	20-Oct	20-Aug	↔	11-Sep
	Antwerp	3-Oct	16-Sep	21-Oct	20-Aug	↔	12-Sep
Lewis	Talcottville	3-Oct	17-Sep	20-Oct	18-Aug	↔	10-Sep
	Martinsburg	4-Oct	17-Sep	21-Oct	20-Aug	↔	11-Sep
	Carthage	4-Oct	17-Sep	21-Oct	21-Aug	↔	13-Sep
St. Lawrence	Gouverneur	27-Sep	11-Sep	14-Oct	16-Aug	↔	7-Sep
	Hammond	28-Sep	10-Sep	17-Oct	18-Aug	↔	8-Sep
	Ogdensburg	3-Oct	16-Sep	21-Oct	14-Aug	↔	12-Sep
	Canton	2-Oct	11-Sep	24-Oct	20-Aug	↔	11-Sep
	Madrid	4-Oct	17-Sep	21-Oct	21-Aug	↔	13-Sep
	N Lawrence	6-Oct	19-Sep	24-Oct	22-Aug	↔	14-Sep
	Louisville	30-Sep	16-Sep	14-Oct	18-Aug	↔	9-Sep
Average		**4-Oct**	**16-Sep**	**22-Oct**	**20-Aug**	↔	**12-Sep**

Find Profitable Opportunities on Your Dairy: The Importance of Financial Analysis

By Daniela Gonzalez Carranza

With milk prices, most farms have tight margins; business management is key to the dairy's success. Cornell University's PRO-DAIRY and Cornell Cooperative Extension have collaborated in the Dairy Farm Business Summary (DFBS) program for almost 60 years. This program aims to provide dairies with a powerful financial analysis and benchmarking tool. The Dairy Business Summary is a detailed financial report allowing farms to compare to the average performance of other dairies, helping them identify strengths and opportunities. It also helps individual farm businesses set financial and production goals and track the changes over the years. It provides a framework to make more informed financial decisions. The DFBS team gathers information, including financial statements, dairy enterprises, crop programs, labor and capital efficiency, and profitability.

For example, due to NY labor regulations, having more control over labor costs and efficiency is essential. The DFBS report allows the producer to analyze key labor measurements like Cows per worker equivalent, Milk sold per worker equivalent, Labor cost per hired worker equivalent, and Hired labor cost per CWT.

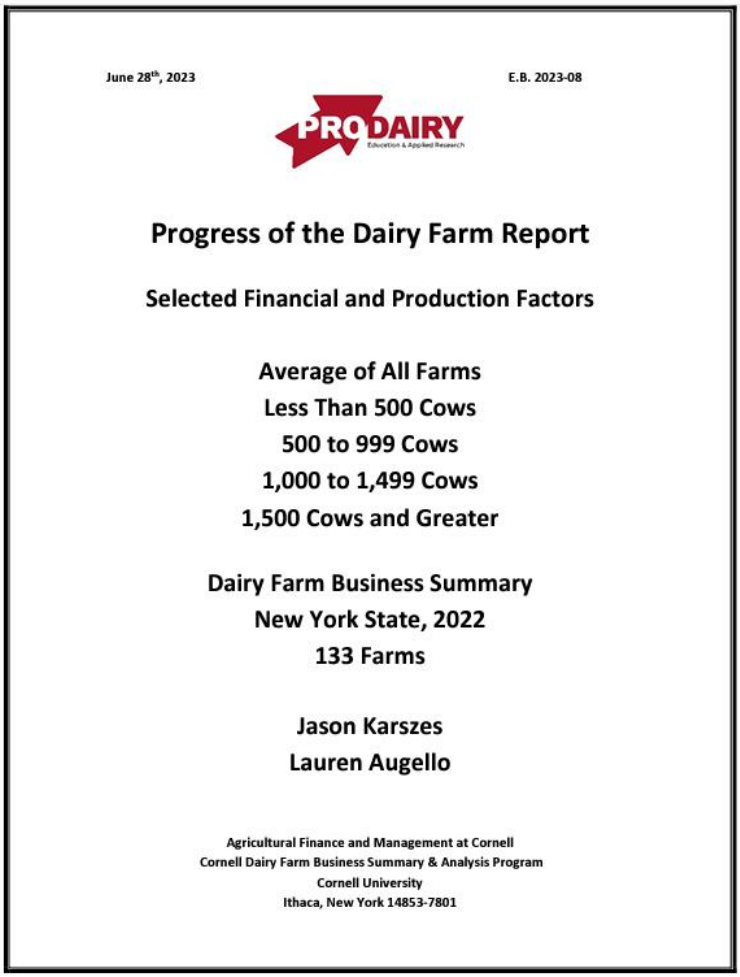
On August 15, the progress of the final 2022 DFBS report, in which more than 130 dairies participated, was published by PRO-DAIRY, with the main findings being:

- Herd size and total milk production increased by 3%.
- Hired labor costs per worker equivalent increased by 6.4%.
- Milk sold per worker increased by 0.6%.
- Total farm operating costs increased 18%.
- Total cost of producing milk increased 19%.
- Gross milk price increased by 37%.
- Rate of return on all capital without appreciation equals 11.6%.

The DFBS is an excellent tool for a dairy's success and essential to the New York dairy industry, providing data for publications or articles.

If you are interested in participating, don't hesitate to contact our Regional Dairy Specialists. You can find the original report, "2022 Progress of the Dairy Farm Report," on the following link:
https://cals.cornell.edu/news/2023/08/2022-progress-dairy-farm-report

More information on the DFBS:
https://cals.cornell.edu/pro-dairy/our-expertise/business/dfbs



June 28th, 2023 E.B. 2023-08

PRO DAIRY
Education & Applied Research

Progress of the Dairy Farm Report

Selected Financial and Production Factors

Average of All Farms
Less Than 500 Cows
500 to 999 Cows
1,000 to 1,499 Cows
1,500 Cows and Greater

Dairy Farm Business Summary
New York State, 2022
133 Farms

Jason Karszes
Lauren Augello

Agricultural Finance and Management at Cornell
Cornell Dairy Farm Business Summary & Analysis Program
Cornell University
Ithaca, New York 14853-7801

Understanding Automated Monitoring Systems (Estrous and Health)

By Daniela Gonzalez Carranza

Over the last few years, information about automated technologies has spiked considerably, making it hard to keep current and decide whether to invest in them. Automated estrous and health monitoring systems consist of sensors or accelerometers that help measure specific parameters. The sensor can be wearable or non-wearable; for example, we have neck-attached sensors, leg-attached sensors, ear tag sensors, or rumen boluses. Other non-wearable technologies include milk weights. The three main areas where automated estrous and health monitoring systems (AEHMS) have an impact are reproduction, herd health, and labor.

Reproduction

Detecting estrous is a crucial factor that contributes to reproduction performance and farm profitability. However, it can be challenging for farms due to external factors such as farm personnel and individual cow factors. Some of the challenges include variation between farm workers, inconsistent detection periods, cows showing estrous signs for a narrow period, and because it's a labor-intensive activity. Fortunately, the extensive use of automated estrous detection (AED) systems can be an alternative to overcome these challenges. AED systems provide 24/7 uninterrupted and objective monitoring, passing through an adaptation period for each cow, and provide alerts depending on individual cow physical changes. Moreover, AED systems can help reduce labor or reallocate farm personnel time to other activities. Increasing heat detection can directly affect the 21-day pregnancy rate, and if improved, it can increase the net value per cow per year by $3 to $21+, depending on the farm's current situation.

Health

Automated health monitoring systems (AHMS) are often integrated into the estrous detection systems. AHMS incorporates one or more measurements, such as ruminal activity, temperature, or milk production, and interprets it into a health score of the animal. Diseases can change one or more of these parameters. Metabolic and digestive disorders can be detected at a reasonable time, while some conditions, such as mastitis and metritis alone, still need to be detected in combination with traditional methods.

Farms with intensive time-consuming health protocols for sick cows can have the same outcome (same sick cows identified) with an AHMS, but the automated system allows for reduced labor hours. On the other hand, farms that have non-consistent protocols could benefit from detecting and giving attention to sick cows, probably having a better herd health outcome. In both scenarios, addressing how AHMS helps farms focus only on sick cows without disrupting healthy cows is essential.

Labor

It's not news that NY Labor regulations keep challenging farms to more efficiently allocate farm personnel time. Depending on the farm, time spent on estrous and health monitoring can be reduced or reallocated to other areas that need more attention. Hired labor is the second biggest expense on a dairy farm, and with increases in wages, this could potentially have the most economic impact.

Key points

- Several factors need to be considered when deciding on acquiring an automated system (for estrous detection, health monitoring, or both), such as current reproductive and health protocols and expected scenarios to determine the potential impact of the system.
- Labor could potentially be the category with the most economic impact once a monitoring system is incorporated.
- Producers should also consider life expectancy of the system, salvage value, and system maintenance.
- Producers can benefit from an economic assessment of expected outcomes before acquiring the system.

What farms can benefit from automated estrous and health monitoring system?

- Farms with large variability of personnel responsible for the detection of estrous and health monitoring
- Farms that have programs based on estrous detection or combined with timed AI
- Farms that don't have a consistent health monitoring protocols
- Farms with intensive time-consuming health monitoring protocols
- Farms with a labor shortage

If you are considering acquiring an automated estrous or health monitoring system don't hesitate to reach out to our specialists to know more about the benefits and assess the possible farm-specific economic impacts.

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What's Happening in the Ag Community

St. Lawrence County a Day at the Farm, Sept 23, 2023, 11am-3pm, Stauffer Farms (925 CR 54, North Lawrence, NY)
Small Fruit Workshop, Oct 14, 2023, 9am-12:30pm, CCE Lewis County (7395 East Road, Lowville, NY)